

An adjustable mounting bracket for sun screens.

5 The invention relates to a bracket for mounting a sun screen, in particular in a niche by means of screws or similar fastening devices, comprising at least one hole in the bracket and a washer fitted between the head of the fastening device and the bracket.

Traditionally, brackets for sun screens, e.g. in the form of roller blinds are mounted by means of fastening devices, such as screws or nails, but in practice there is an
10 uncertainty as to the final placement of the fastening device, because a hole may not always be drilled precisely in the chosen spot or because a nail may change its direction during hammering. Precisely the large lengthwise dimensions of roller blinds, the roller blind tube as well as the height of the fully extended roller blind, make lack of adjustment during the fitting very visible. In order to permit a certain lining-up of
15 fits that would be askew, if the fastening element passed through a pre-determined circular and narrow hole in the bracket, oblong holes have been formed in the brackets, e.g. a vertical oblong hole below and a horizontal oblong hole above in a two-hole mounting. This permits a certain lining-up immediately before the final tightening of the fastening device, but the problems of wrong placements of drilled
20 holes would already have manifested themselves. Possibly holes may be used that are much too large in comparison to the diameter of a head of a screw or nail, and such holes may be combined with large washers that however only press against a part of the periphery of the hole in case of a lining-up of a large offset. Hereby an uneven or local load on the mounting bracket is caused, which may result in distortion.
25 Furthermore, large washers cannot be used with mounting holes near parts that project perpendicularly from the support close to the holes, and such is precisely the case with roller blind brackets.

According to the invention there is provided a bracket that avoids the disadvantages
30 of hitherto known fastenings and which permits adjustment in directions that are typically at right angles to each other as well as mutual lining-up of both of the brackets that are needed for a sun screen.

This is obtained, in that the hole in the bracket is circular and in that the washer has a circular, plateau-shaped part in a first plane, with a diameter equal to the diameter of the hole and fitted rotatably in the hole, and a surrounding ring-shaped part with a larger diameter in a second plane resting on the bracket, in that the washer is provided with an oblong hole in the circular plateau part.

In this way a bracket is obtained that consists of a rotatable oblong hole due to the cooperation between the washer and the hole of the bracket. Hereby a much increased freedom is obtained in the placement of the fastening screws, e.g. in connection with self-tapping screws where no prior drilling has been performed.

An advantageous embodiment of the invention is particular in that the oblong hole has a length that is equal to the diameter of the circular part. Hereby the widest possible range of adjustment is obtained.

A further advantageous embodiment of the invention is particular in that the ring-shaped part has a serrated edge. Hereby adjustment by turning by means of a finger is enabled. Dependent on the detailed construction, these serrations may be placed so that they do not interfere with the projecting angular part of the bracket.

A further advantageous embodiment of the invention is particular in that the circular part has projecting parts on that side of the element that is opposite the ring-shaped part, for holding the washer in the hole. Hereby the washer remains in the hole and may be considered to be integrated into the bracket.

A further advantageous embodiment of the invention is particular in that there is established a click-adjustment of the angle of the washer. Hereby a given adjustment may be maintained, even if the bracket were later to be removed, with subsequent re-fitting. The click adjustment itself may consist in cooperation between serrations on the edge of a ring-shaped part and a fixed projection in the bracket.

The invention furthermore relates to the use of a bracket as defined above in fitting a sun screen, in that the circular part of the washer is placed in the hole of the mounting

bracket, that a fastening device is fitted through the oblong hole with clearance between the head and the washer, that the ring-shaped part is rotated with respect to both fastening devices during alignment of the sun screen to its desired position, until the oblong holes permit free passage of the shanks of the fastening devices, whereupon the fastening devices are tightened in order to maintain the aligned position of the sun screen.

Another corresponding method that uses the fact that the circular plateau-shaped part fits tightly in the hole, consists in visual adjustment of each washer by turning until a fastening element may pass through the oblong hole and into a pre-drilled hole in the support, while the sun screen is aligned in the desired direction, whereupon the fastening elements are fitted.

By a "head" on a fastening element a part is to be understood that has a larger diameter than the shank, and hereby equally a nut or a rivet head. Such a rivet head may be the remaining part of a POP® rivet in case the sun screen is to be mounted on a sheet subsequent to alignment.

The invention will be described in greater detail with reference to the drawing, in which

Fig. 1 shows a mounting bracket provided with two washers according to an embodiment of the invention,

Fig. 2 shows the two washers separated from from the mounting bracket, from the same point of observation, and

Fig. 3 shows this separated configuration from the reverse side of the mounting bracket.

In Fig. 1 is seen a bracket 1 that is intended for screw mounting on a vertical surface as shown or on a horizontal surface (in particular from below) for fixing one end of a sun screen, such as a roller blind, by insertion of a formed flap 2. The bracket is

angular, and in order to give it strength ribs *r* are provided. Oblong screw holes 3 and 4 are provided, with a diameter (shortest dimension) that is slightly larger than the shank of a screw but smaller than the head of an ordinary screw. On Fig. 1 there is shown a screw with a right-angled transfer to the shank, but a conical surface at the hole surround may make a flat-headed screw with conical transfer to the shank equally
5 useful. In order to obtain a secure fastening, reduction of play and in order to obtain a nice look it is desirable that the bracket 1 is as close to the end of the roller blind as possible. This means that the bracket must be aligned by means of the holes 3 and 4. With the orientation of the holes as shown there is only a possibility for displacement
10 up and down. However, the holes are provided in washers 5 and 6 that may rotate about a horizontal axis of symmetry, and it is possible to find an orientation of the oblong holes 3 and 4 that corresponds to the desired alignment of the bracket 1.

The edges 11 of the washers are provided with serrations that enable rotation for
15 adjustment by means of the finger or tools. In the embodiment shown, the serrations interact with small projections *p* that are formed in the bracket 1. The alignment possibilities correspond to optional placement of screw holes anywhere within circles having diameters that are defined by the largest dimension of the holes.

20 In Fig. 2 is shown that the bracket 1 is provided with circular holes 7 and 8. These holes interact with a cylindrical thickening of the washers 5 and 6, as seen in Fig. 3. Here it is shown that the washers have cylindrical thickenings 9 and 10 that have essentially the same diameter as the holes 7 and 8, and the larger diameter of the normally visible parts 5 and 6 of the washers transmit the mounting forces from a
25 screw to the bracket and then to the support. In order to prevent that the washers 5, 6 fall out of the holes 7, 8, the edges of the cylindrical parts 9, 10 are squeezed or have cast projections, for instance in three places *p'*, in order that parts of washer material projects towards a chamfering 12, 13 at the rear edges of the holes 7, 8. It is not essential for the functioning of the washers that the thickenings are cylindrical, in that
30 they may equally well be pressed in a sheet material that provides a somewhat different shape in the holes 7, 8. Correspondingly, the washers may be cast in a plastic material or turned in aluminium, possibly extruded aluminium by cutting off and turning down a pipe with an oblong inside profile.